



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C11D 1/04, 1/66, 9/00, 1/62, A61K 7/48, 7/50, C07C 53/126, 53/128, 69/24	A3	(11) International Publication Number: WO 99/20722 (43) International Publication Date: 29 April 1999 (29.04.99)
(21) International Application Number: PCT/US98/22054 (22) International Filing Date: 19 October 1998 (19.10.98) (30) Priority Data: 60/063,603 23 October 1997 (23.10.97) US (71) Applicant (for all designated States except US): THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): CONNOR, Daniel, Stedman [US/US]; 9217 Sagemeadow Drive, Cincinnati, OH 45239 (US). SCHEIBEL, Jeffrey, John [US/US]; 6651 Miami Trails Drive, Loveland, OH 45140 (US). BACK, Deborah, Jean [US/US]; 7189 State Route 128, Cleves, OH 45002 (US). TRINH, Toan [US/US]; 8671 Creekwood Lane, Mainville, OH 45039 (US). VINSON, Phillip, Kyle [US/US]; 5803 Windermere Lane, Fairfield, OH 45014 (US). BURCKETT-ST. LAURENT, James, Charles, Theophile, Roger [GB/US]; 11477 Gideon Lane, Cincinnati, OH 45249 (US). SIVIK, Mark, Robert [US/US]; Apartment F, 40 Clubhouse Lane, Fairfield, OH 45014 (US). WAHL, Errol, Hoffman [US/US]; 8021 Deersshadow Lane, Cincinnati, OH 45242 (US). FRANKENBACH, Gayle, Marie		[US/US]; 10010 Yoyager Lane, Cincinnati, OH 45252 (US). DEMEYERE, Hugo, Jean Marie [BE/BE]; Linthoutstraat 59, B-1785 Merchtem (BE). CRIPE, Thomas, Anthony [US/US]; 599 Three Chimneys Lane, Loveland, OH 45140-7345 (US). DECLERCQ, Marc, Johan [BE/BE]; Ringlaan 77, B-1653 Strombeek-Bever (BE). SEVERSON, Roland, George [US/US]; 10184 Amberwood Court, Cincinnati, OH 45241 (US). (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US). (81) Designated States: BR, CA, CN, JP, MX, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> (88) Date of publication of the international search report: 8 July 1999 (08.07.99)
(54) Title: FATTY ACIDS, SOAPS, SURFACTANT SYSTEMS, AND CONSUMER PRODUCTS BASED THEREON (57) Abstract <p>Novel fatty acids and derivatives thereof such as salts, new surfactant systems comprising one or more of these compounds, consumer products such as laundry products, personal care products, pharmaceutical compositions, industrial cleaners, and the like comprising said compounds of surfactant systems.</p>		

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INTERNATIONAL SEARCH REPORT

Inter. Appl. No.

PCT/US 98/22054

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C11D1/04 C11D1/66 C11D9/00 C11D1/62 A61K7/48
A61K7/50 C07C53/126 C07C53/128 C07C69/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C11D A61K C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 213 333 A (ETHYL CORPORATION) 25 November 1970 see page 1, column 1, line 11 - line 16; claims 1-3 see page 2, column 2, line 98 - line 105 ---	1, 10, 12, 14-16
X	DATABASE WPI Section Ch, Week 8821 Derwent Publications Ltd., London, GB; Class B05, AN 88-145120 XP002092011 & JP 63 088 123 A (TSURUI YAKUHI KK) , 19 April 1988 see abstract ---	1, 16
A	---	14, 15
	-/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

4 February 1999

Date of mailing of the international search report

20. 04. 1999

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 34972 A (PROCTER & GAMBLE) 25 September 1997 see claim 1 & US 5 747 443 A cited in the application ---	19,20
A	EP 0 773 284 A (PROCTER & GAMBLE) 14 May 1997 see page 4, line 41 - page 5, line 26; claims ---	1,10, 14-16
A	WO 94 12608 A (PROCTER & GAMBLE) 9 June 1994 cited in the application see page 7, paragraph 3 - page 8, paragraph 1; claim 1; examples IV,VII ---	1,10,12
A	DE 24 31 581 A (HENKEL & CIE GMBH) 22 January 1976 see page 3, paragraph 3; claims 1,4; example 8 ---	1,10, 14-16
A	EP 0 483 689 A (KAO CORP) 6 May 1992 see page 3, line 33 - line 41; claims 1,2 ---	1,12, 14-16
A	US 3 676 338 A (FRIES WALTER ET AL) 11 July 1972 see claim 1 ---	1,10, 14-16, 19,20
A	DATABASE WPI Section Ch, Week 7937 Derwent Publications Ltd., London, GB; Class D25, AN 79-668813 XP002092008 & JP 54 097 609 A (POLA KASEI KOGYO KK) , 1 August 1979 see abstract ---	1,12, 14-16
A	DATABASE WPI Section Ch, Week 9328 Derwent Publications Ltd., London, GB; Class D21, AN 93-224473 XP002092009 & JP 05 148 500 A (YUHO CHEM KK) , 15 June 1993 see abstract ---	1,12, 14-16
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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE WPI Section Ch, Week 9039 Derwent Publications Ltd., London, GB; Class B05, AN 90-294272 XP002092010 & JP 02 207 018 A (KAO CORP) , 16 August 1990 see abstract</p> <p>---</p>	1,11,14, 15
A	<p>US 4 832 856 A (RUTZEN HORST ET AL) 23 May 1989 see column 7, line 31 - line 39; claim 1</p> <p>---</p>	19,20
A	<p>WO 95 35411 A (PROCTER & GAMBLE) 28 December 1995 see abstract; claims 1,7</p> <p>-----</p>	1,13-16

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 98/ 22054

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: all in part
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see further information sheet

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see further information sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-20 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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International Application No. PCT/ US 98/22054

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

In the present set of claims a very high number (well in excess of 2000) of different acids (and esters, stereoisomer or salts thereof) is presented. This set of claims violates the requirements of Article 6 PCT relating to clarity and conciseness. The presentation makes it so difficult to determine the matter for which protection is sought (Article 6 PCT) that a meaningful search over the whole breadth of the claims is impossible. Furthermore, the applicant has already indicated in the present application (cf. pages 2- 4) that many of the actually claimed compounds are already well known in the art. This makes it even more unclear to determine the matter for which protection is sought.

For this reason it has been decided to limit the search to the 77 different acids (including their soap derivatives) specifically disclosed in Examples 1- 82, and to the various intended uses as disclosed in claims 10- 13 and 19.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 98/22054

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-20 (all in part)

6-, 7- and 10-methyltridecanoic acid, their esters, stereoisomers or salts, and their various uses.

2. Claims: 1-20 (all in part)

5-, 8- and 9-methylpentadecanoic acid, their esters, stereoisomers or salts, and their various uses.

3. Claims: 1-20 (all in part)

2,5-, 2,7-, 2,9-, 2,11- and 2,13-dimethyltetradecanoic acid, their esters, stereoisomers or salts, and their various uses.

4. Claims: 1-20 (all in part)

2,5-, 2,7-, 2,9-, 2,11-, 2,13-, 7-8, 8,9- and 9,10-dimethylpentadecanoic acid, their esters, stereoisomers or salts, and their various uses.

5. Claims: 1-20 (all in part)

2,5-, 2,7-, 2,9-, 2,11-, 2,13- and 2,15-dimethylhexadecanoic acid, their esters, stereoisomers or salts, and their various uses.

6. Claims: 1-20 (all in part)

2,7-, 2,9-, 2,11-, 2,13-, 2,15- and 9,10-dimethylheptadecanoic acid, their esters, stereoisomers or salts, and their various uses.

7. Claims: 1-20 (all in part)

2,5-, 2,7-, 2,11-, 2,13-, 2,15- and 2,17-dimethyloctadecanoic acid, their esters, stereoisomers or salts, and their various uses.

8. Claims: 1-20 (all in part)

6,7-dimethylundecanoic acid, its esters, stereoisomers or salts, and their various uses.

9. Claims: 1-20 (all in part)

7,8-dimethyltridecanoic acid, its esters, stereoisomers or

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

salts, and their various uses.

10. Claims: 1-20 (all in part)

5-, 6-, 7-, 8-, 9- or 11-methyl-2-ethyltridecanoic acid, their esters, stereoisomers or salts, and their various uses.

11. Claims: 1-20 (all in part)

5-, 6-, 7-, 8-, 9-, 10-, 11- and 13-methyl-2-ethyltetradecanoic acid, their esters, stereoisomers or salts, and their various uses.

12. Claims: 1-20 (all in part)

6- and 9-ethyltridecanoic acid, their esters, stereoisomers or salts, and their various uses.

13. Claims: 1-20 (all in part)

7-, 8- and 9-ethylpentadecanoic acid, their esters, stereoisomers or salts, and their various uses.

14. Claims: 1-20 (all in part)

5- and 9-propyldodecanoic acid, their esters, stereoisomers or salts, and their various uses.

15. Claims: 1-20 (all in part)

6-, 7- and 9-propyltetradecanoic acid, their esters, stereoisomers or salts, and their various uses.

16. Claims: 1-20 (all in part)

5-, 6-, 7-, 8-, 9-, 10- and 11-methyl-2-propyldodecanoic acid, their esters, stereoisomers or salts, and their various uses.

17. Claims: 1-20 (all in part)

5-, 6-, 7-, 8-, 9-, 10- and 11-methyl-2-propyltridecanoic acid, their esters, stereoisomers or salts, and their various uses.

18. Claims: 19,20 (all in part)

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Fabric softeners containing quaternary nitrogen compounds, optionally with branched fatty acid substituents on the nitrogen atom, as the softener-active substance.

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information on patent family members

International Application No

PCT/US 98/22054

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information on patent family members

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